Exhibit U

Transmittal

Parsons Brinckerhoff
Tower 1, 10th Floor
100 S. Charles Street
Baltimore, MD 21201-2727
(410) 727-5050
Fax: (410) 727-4608

To: Jessica Ceglowski
Allan A. Myers, L.P.
8103 Governor Printz Blvd
Claymont, DE 19703

From: Susan MacNeil, P.E.
Date: 8/03/11

Re: Gov. Printz Interceptors – Sect. I
Submittal Transmittal No. TRN0121
Geotech. Instrum. Plan - Revised

via:	for your:	the following:		
☐ mail	☐ information/use	■ shop drawings	☐ change order	☐ specifications
☐ messenger	☐ approval	☐ copy of letter	☐ plans	☐ other _____
■ overnight	■ review/comment	☐ prints	☐ samples	_____

Description	copies	date
Submittal review comments	2 paper	

If enclosures are not included, kindly notify us at once

Comments

See review comments on page 2.

Signature: S. MacNeil
Susan MacNeil, P.E., Lead Engineer

Copies to:
Ed Kuipers, P.E., Assistant County Engineer, NCC
Robby McDonald, Field Engineer, PB
PB Office File (paper copy)

PB REVIEW COMMENTS
Governor Printz Interceptors – Section 1 Project
Allan A. Meyers Transmittal No. TRN0121
GEOTECHNICAL INSTRUMENTATION PLAN - REVISED

(Pump Station to Station 219+00 Only)

1. AAM's TRN0121, Geotechnical Instrumentation Plan – Revised,dated July 27, 2011 is approved with the following correction noted. Resubmittal not required.

2. The emergency response action plan threshold limits for the seismographs shall defer to the Engineer's response to AAM's July 21, 2011 Request for Change (RFC) regarding same.

3. Note: The level of accuracy for instrumentation readings shall match the tolerances specified in Special Provision 02140, Geotechnical Instrumentation and have the same number of significant figures specified for Level 1 alert threshold values. For example, surface settlement marker readings to date have been taken to one-hundredth of a foot (0.01). However, the tolerance in Special Provision 02140, Section 1.04 B is to 0.001 foot.

ALLAN A. MYERS
American Infrastructure

Allan A. Myers, LP

TRANSMITTAL

No. TRN0121

PROJECT: Governor Printz Interceptors - Section 1

DATE: 07/27/2011

TO: Parsons Brinckerhoff
100 South Charles Street Tower 1, 10th Floor
Baltimore MD 21201
USA

RE: Geotechnical Instrumentation & Monitoring - REVISED

ATTN: Robby McDonald

JOB: 1020034

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☑ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	SENT VIA:	☐ Returned
☐ Specifications	☐ Attached ☐ Separate Cover	☐ Returned for Corrections
☐ Other:		☐ Due Date:
		☐ Other:

Line	*Item*	*Package*	*Code*	*Rev.*	*Qty*	*Date*	*Description*	*Status*
1	Submittal		2140-09	1			Geotechnical Instrumentation & Monitoring - *REVISED*	Open

REMARKS:

CC:

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 02140
REVIEWED BY

Signed: Jessica Ceglowski

ALLAN A. MYERS

1805 Berks Road • Worcester, PA 19490
www.americaninfrastructure.com

"BETTER, FASTER, SAFE"

ALLAN A. MYERS
GOV. PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC 02140
REVIEWED BY

21-JUL-2011

Parsons Brinckerhoff
Attn:
Robby McDonald
100 South Charles Street
Baltimore, MD 21201

AI Letter: COM0022

AI Job Number: 1020034

Re: Governor Printz Interceptors - Section 1
Geotechnical Instrumenation Plan

Dear Mr. McDonald,

The attached submittal has been amended to address the comments received from PBW on 7/6/11. The submittal package has been revised to incorporate the comments.

1.) Response Action Plan - Level 2 Limits: The enclosed Response Action Plan has been amended to show that PB Representative, Robby McDonald, will be notified immediately if a Level 1 or Level 2 parameter is reached.

2.) Response Action Plan - Seismograph Thresholds: AAM has submitted a Request for Change to the Specifications in the Revised Rock Excavation/Blasting Plan. Enclosed in this submittal is a copy of that RFC.

3.) Equipment Procedures / Piezometers - A Request for Change to the Specifications has been submitted to change the 60 day monitoring period to a 30 day monitoring period for the piezometers at station 202, 203 and 204 only. Attached is a copy of that RFC and the subsequent email from Robby McDonald approving the change.

4.) Equipment / Procedures - Cased Benchmarks - The deep cased benchmarks are not required to be near the pipe trench and should be placed in an area that will have little or no disturbance. AAM has installed one benchmark at station 214+06, approx 70' left of centerline. This is located in an asphalt parking lot adjacent to the southbound lanes. Since there is no excavation planned for pipe in this area, the tip of the benchmark is 21' below the existing paved surface grade.

5.) Equipment / Procedures - Surface Settlement Markers: AAM will utilize the Surface Settlement Markers (wedge anchors) in the closest active travel lanes as survey traverse points in addition to the benchmarks for the project and the deep cased benchmark referenced in item 4. The flush mount markers are not for survey control. They are to track any movement near the gas mains.

6.) Equipment / Procedures - Flush Mounted Deep Settlement Markers: The Flush Mount Deep Settlement Markers will be located on either side of the trench depending on the available space but always within the 11' drawdown influence zone. These will not be directly above the gas main as the depths for each will need to go to the invert of the uppermost utility line.

7.) Equipment / Procedures - Seismographs: As referenced in the Rock Excavation Supplement, a minimum of three (3) seismographs will be monitored for every blast. One of these will be at the nearest above ground structure, one will be above the closest gas line and one will be at a flexible location as agreed to by the PB representative.

We have included an updated Instrumentation location plan to show the Deep Cased Benchmark.

AAM anticipates that this should clarify the comments received for transmittal TRN0104. We would request that we be contacted verbally or via email to further clarify this instrumentation plan if there is a possibility that it will not

be approved or approved as noted prior to a formal response.

Thank you for your cooperation.

Sincerely,

Jessica Ceglowski

Encl:

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 0040
REVIEWED BY

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 02140
REVIEWED BY

ATTACHMENT 1
PB REVIEW COMMENTS

Governor Printz Interceptors – Section 1 Project
Allan A. Meyers Transmittal No. TRN0104
GEOTECHNICAL INSTRUMENTATION
(Pump Station to Station 219+00 Only)

1.) RESPONSE ACTION PLAN -- LEVEL 2 LIMITS – It is understood that work will stop at the Level 2 upset limit and, similar to Level 1, that AAM will notify the owner's representative (Robby McDonald) immediately. Item 11.1. was not restated as such pursuant to 6/13/11 comment 4.

2.) RESPONSE ACTION PLAN -- SEISMOGRAPH THRESHOLDS – Seismograph Level 1 and Level 2 thresholds shall remain as specified. The contractor may petition for relief from the specified requirements by means of an RFC if reasonable measures to meet the requirements are proven to be inadequate.

3.) EQUIPMENT / PROCEDURES – PIEZOMETERS – It is stated that AAM has requested a change of the specification to reduce the monitoring period. PB has no record of an RFC relative to this request. As is, monitoring of piezometers shall be in accordance with 3.11 C. 3. of specification section 02140. It is further understood that stabilized water levels (repeatable readings over a period of days) must be attained in the piezometers to the satisfaction of the owner's representative prior to initiation of construction activities.

4.) EQUIPMENT / PROCEDURES – CASED BENCHMARKS – It is stated that benchmarks will be installed a minimum of 10-feet below the deepest excavation in the area of the benchmark, but Part E. on the following page shows the plan tip for CB#1 at approximate station 214+00 at an estimated tip elevation (-5.0) that is about 3-feet above plan invert. Please confirm intent.

5.) EQUIPMENT / PROCEDURES – SURFACE SETTLEMENT MARKERS – Pursuant to Comment 7, flush mounted deep settlement markers are indicated on 100-foot intervals. Are the surface settlement markers, which have been reduced to 200-foot intervals on basis on same comment, going to be used for survey control, or is AAM intending to set the survey traverse points separately? Please clarify intent.

6.) EQUIPMENT / PROCEDURES – FLUSH MOUNTED DEEP SETTLEMENT MARKERS – As shown by the attached plan, we assume that monitoring will be set up between the trench and the gas lines, not above the gas lines, as indicated in no. 3 of the narrative for Temporary Support (TRN 0099).

7.) EQUIPMENT / PROCEDURES – SEISMOGRAPHS – The narrative indicates that "Three (3) seismographs will be placed along the nearest structures to the blast event." Note that 3.04 D. of specification section 02316 Rock Excavation and Removal indicates that "The Contractor shall

monitor each blast with three (3) seismographs, located as approved, between the blast area and the closest structures and/or utilities." It is understood that seismographic monitoring will include the gas lines adjacent to the excavation and that the specific locations of seismographs shall be subject to the approval of the owner's representative based upon submission of same at least one day prior to each blast event, as per 3.02 F. of specification section 02140.

ALLAN A. MYERS
GOV. PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 02140
REVIEWED BY

EARTH ENGINEERING INCORPORATED
Geotechnical Engineers & Geologists

June 23, 2011
EEI Project No. 24608.00

Ms. Jessie Ceglowski
Allen A Myers, Inc.
1805 Berks Road
Worcester, PA 19490

Re: Instrumentation & Monitoring Plan
Response to Comments
Pump Station to Sta. 2+19
Governor Printz Interceptors
New Castle County, DE

Dear Ms. Ceglowski:

As requested by Allan A. Myers, Inc. (AAM), Earth Engineering Incorporated (EEI) has reviewed the comments on the Instrumentation and Structural Monitoring Plan made by PB Americas, Inc. (PB) of Baltimore, MD (PB) for the Governor Printz Interceptors project in New Castle County, DE. Response to comments and necessary clarifications to properly address PB's comments are attached.

EEI appreciates the opportunity to be of service to Allen A Myers, Inc. on this project. If additional information is required or there are questions regarding the contents discussed herein, please contact the undersigned.

Sincerely,

Earth Engineering Incorporated

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC 02140
REVIEWED BY

James A. McKelvey, III, P.E., D.GE
Director, Geotechnical Design Division

JAMES ALOYSIUS McKELVEY, III
LICENSE
No. 15609
DELAWARE
PROFESSIONAL ENGINEER

Attachments

G:\REPORT\GEOTECH\24000-24999\24608.00 - Governor Printz Inteceptor\Excavation and Dewatering\Temporary Support Related Submittal.doc

Corporate Headquarters
115 W Germantown Pike, Suite 200
East Norriton, PA 19401
(610) 277-0880 FAX 277-0878
eei@earthengineering.com

Southern New Jersey
403 Commerce Lane
West Berlin, NJ 08091
(856) 768-1001 FAX 768-1144

Central Pennsylvania
5010 Ritter Road, Suite 116
Mechanicsburg, PA 17055
(717) 697-5701 FAX 697-5702

Lehigh Valley
149 Main Street
Emmaus, PA 18049
(610) 967-4540 FAX 967-4488
www.earthengineering.com

GOVERNOR PRINTZ INTERCEPTOR – Section I
Geotechnical Instrumentation & Structural Monitoring – Section 2140

This instrumentation submittal is only for the area from the Stony Creek Pump station to station 219+00. A subsequent submittal will be completed for the area north of 219+00.

1.03 Submittals

A. Preliminary to Installing Instrumentation

1. All instrumentation is being directed by the same engineer that is directing the Temporary Support and Control of Water. Our Engineer, Jay McKelvey is a registered Professional Engineer in the State of Delaware. Please see attached resume.

a. Jay McKelvey is also acting as the Field Instrumentation Specialist in addition to Craig Gleason – resume attached. Geophysical Consultants will be doing the monitoring for all seismograph work for blasting. See attached resumes. The installation of the piezometers will be completed by Advanced Environmental Concepts (AEC). Their qualifications are listed below:

AEC DNREC Well Contractors No. 4508
Josh Winters – Geotechnical Well Drillers License No. 5313
Steve Drapers – Geotechnical Well Drillers License No. 903

b. Acknowledged.

c. AAM intends to employ Solutions Engineering, Dominic Agresta, State of Delaware PLS No. 757, to oversee installation of the surface settlement markers, installation of the deep cased benchmarks and the survey control for the project.

2. AAM will employ (AEC) to install piezometers at station 202, 203 and 204. AAM acknowledges PBW's comments on 5/13/11 that these are initial locations and that more locations may be required per the specifications. In addition, AAM will employ AEC install the deep cased benchmarks in the locations shown on the attached plan. Solutions Engineering will direct the installation of the deep cased benchmarks and the surface settlement markers in the southbound lane as shown on the plan at 200' intervals per PBW's comments received on May 13, 2011. Planned duration for the installation of the instrumentation of to 219+00 only is 7 work days. Survey control setup duration for this area is 2 work days. Seismograph monitoring for blasting will be by Geophysical Consultants, Inc. (GCI). The preconstruction and postconstruction surveys will be by Geophysical Consultants, Inc. Preconstruction surveys have been completed and submitted.

Equipment / Procedures

Piezometers – Piezometers will be installed at approximately 30' depths from current surface elevations at locations noted above. The location of the piezometers will be within the area of influence of 11'. Since AAM intends to use the existing northbound shoulder for transport of material, the piezometers are installed on the median side of the trench. The piezometers will be approximately 10' away from the edge of trench limits. Trench limits are determined as 2' from the outside edge of the pipe on both sides. This includes 1' of stone backfill and the trench

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 02140
REVIEWED BY

box shield width of 1'. AAM has requested a change of the specification for these piezometers only to a reduced monitoring period of 30 days, based on Jay Mckelvey's recommendation, or until the water reaches equilibrium. AAM proposes to expedite stabilized water levels by pumping down the piezometers initially instead of allowing natural equilibrium. Regardless, stability will be reached prior to continuing dewatering or excavation within the area of the gas mains.

Cased Benchmarks – This devices will be installed outside of the confines of the construction area to provide an accurate elevation benchmark for the readings of the settlement markers deployed on the project. The benchmarks will be installed a minimum of 10' below the deepest excavation in the area of the benchmark or will be terminated at refusal depth. Each benchmark installed will consist of an outer casing of 3 ½" diameter ASTM A53 threaded black steel pipe and a 2" diameter inner pipe. The casing and benchmark will be installed using the proposed method found in specification section 2140, Part 3, Subtitle 3.04 – Installation of Deep Benchmarks. Each Cased Benchmark will be protected with an H-20 load rated curb box.

Surface Settlement Markers – AAM will utilize expansion anchors for monitoring the ground surface in the closest active travel lane – southbound. As per the PBW comments dated 5/13/11, these markers can be installed at every 200' of station length. Surface settlement markers will consist of expansion type anchors with an outer alloy sleeve, inner lead alloy wedge nut and a stainless steel cap head bolt. Installation of the anchors will be in accordance with specification Section 2140, Part 3, Subtitle 3.05 – Installation of Surface Settlement Markers.

Flush Mount Deep Settlement Markers - . Due to the concern for the movement or settlement of the gas mains on the east side of the northbound roadway, AAM has proposed installing the Flush Mount Deep Settlement Marker. Based on PBW's comments received on May 13, 2011, PBW agrees with the necessity of these markers at every 100' along the trench. A detail from our Engineer is attached.

Crack Monitors – There are no crack monitors planned in this area of work. The only structures that would require Crack Monitoring pins are located on properties that we are not allowed to access. See notes from preconstruction surveys.

Seismographs – Geophysical Consultants will utilize Geosonics 3000LC seismographs for the monitoring of vibrations during blasting operations. Each seismograph has the capability of measuring four channels, three for each plane of motion and one channel for monitoring air overpressure. Three (3) seismographs will be placed along the nearest structures to the blast event. The seismographs will be spiked into firm ground adjacent to the structures (s) and the geophone will be buried where practicable, otherwise the geophone will be weighted with a 30# sandbag in accordance with industry standards. Specific locations of the seismographs will be determined and documented based on the area to be blasted that day. The blasting plan has been submitted but has not been approved and the areas will vary based on rock height, overburden and potential vibration levels.

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 02146
REVIEWED BY

3. Please see attached instrumentation materials.
4. Preconstruction survey documentation was submittal as Transmittal No. 58 on April 1, 2011.

B. Instrument Monitoring Data

1. Acknowledged. Forms for approval attached.
2. Acknowledged
3. Acknowledged
4. Acknowledged.

C. Daily Logs

Items 1 thru 6 are acknowledged and forms for approval are attached.

D. Survey Notes – Acknowledged

E. Working Drawings

1. Please see attached plan view of the locations of each of the instruments to be monitored. The piezometers will be located within 11' area of influence to the trench as determined by EEI. The cased deep benchmarks will be as shown on the drawing for required turns, site distances, etc.

CB#1 at approximately station 214+00
Planned Tip elevation +/- -5.0 Actual Elevation TBD
Planned Surface Elevation +/- 10.0 Actual Elevation TBD

2. Acknowledged.
3. Acknowledged.

F. Response Action Plan

Please see attached Response Action Plan

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 02140
REVIEWED BY

ATTACHMENT 1
PB REVIEW COMMENTS

Governor Printz Interceptors – Section 1 Project
Allan A. Meyers Transmittal No. TRN0086
GEOTECHNICAL INSTRUMENTATION
(Pump Station to Station 219+00 Only)

1.) WORKING DRAWINGS – We acknowledge your plan for engineering oversight of the instrumentation program, however, in accordance with the requirements of 1.03 E. 1. of specification section 02140, the plan is to be submitted under the stamp of the responsible engineer.

2.) SCOPE OF WORK – The last paragraph indicates that the instrumentation monitoring program changes / subtractions [from the specified requirements] are as a result of "the deletion of these methods." As discussed on 5/13/11, the requirements for monitoring are independent of the contractor's chosen means and methods.

3.) RESPONSE ACTION PLAN CONTINGENCY PLANNING – The plan indicates that contingency plans cannot be identified until the specific circumstances can be reviewed. Nevertheless, the contractor must envision at least a few response measures in the event of, for instance, a gas pipeline break. As per 1.03 F. 1. of specification section 02140, the plan shall identify key structures and utilities throughout the site and their owners and responsible contact persons. (Refer to comment 13 in letter of PB review comments for revised blasting plan dated June 9, 2011)

4.) RESPONSE ACTION PLAN ALERT LEVELS -- The Level 1 Alert Threshold Response indicates that Robby McDonald will be contacted immediately, which is appropriate, but the Level 2 upset limit response indicates that AAM will be notified immediately, which is different. The plan should be clear that the work will stop at the Level 2 upset limit, regardless of circumstances, followed by an assessment of causative mechanisms and implementation of mitigation measures. A reversal of the "stop work and assess causative mechanisms" sequence is acceptable at Level 1, but not at Level 2, where work stops first, followed by assessment of actions necessary to get operations back into compliance.

5.) PIEZOMETER READINGS – As per 3.01 B. of 02140 of the specifications, piezometers shall be installed and formal initial readings made not later than 60 days prior to any dewatering operations. This requirement does not seem to coincide with the recently submitted construction schedule showing activities in the planned station 202+00 to 204+00 range beginning on or about the first week in July. Please explain what measures will be instituted to assure that stabilized water levels are obtained prior to the initiation of construction operations.

ALLAN A. MYERS
GOV. PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 02140
REVIEWED BY

6.) NUMBER AND LOCATION OF PIEZOMETERS – Specification section 02140 indicates the requirement for piezometer installations on 100-foot longitudinal intervals, but as agreed, the specific locations are subject to the discretion of the contractor's engineer. The recommendations of AAM's engineer for pairing of the deep settlement markers with piezometers (Ref. TRN 0084 Temporary Support) have not been incorporated into the attached plan. Based upon the contractor's opinion that monitoring of the groundwater table is unnecessary within the fine grained soils south of station 219+00, piezometers have been proposed for the first 200 feet of the northbound lanes portion of the trench alignment (Stations 202+00, 203+00 and 204+00) essentially to prove that the performance criteria set forth by AAM's engineer (Ref. TRN 0085 Control of Water) will be met using the methods of construction proposed. By acceptance of the proposed plan locations of piezometers, NCC is not waiving the overall requirements for groundwater monitoring on 100-foot intervals, but rather acknowledging the professional judgment of AAM's engineering representation to make adjustments to the average piezometer interval spacing. The installation of additional monitoring may be warranted by actual experience that differs from the criteria established by your engineer for implementation and performance of the dewatering system up to station 219+00. Please identify the planned offset distances between the piezometers and the trench excavation and conform the plan to the recommendations of your engineering representation.

7.) SURFACE SETTLEMENT MARKERS VS. SUBSURFACE SETTLEMENT MARKERS – During our meeting of 5/13/2011 it was agreed that the primary risk of construction related subsidence is adjacent to the gas pipelines, as opposed to the "active travel lanes" of Governor Printz Highway (southbound lanes). However, due to the anticipated construction traffic within the zone between the gas lines and the planned trench excavation, it was further agreed that monitoring points in this zone would need to be cased below the existing pavement section in order to accurately reflect ground movement, as opposed to the influence of construction traffic. In PB's opinion, this mode of monitoring would be a more reliable indicator of ground loss or related subsidence than direct monitoring of the in-place gas lines, which may tend to "bridge" over ground losses, at least temporarily. We presume that the Subsurface Settlement Markers, indicated as "B" on the plan sheet, will be constructed in accordance with the detail provided by EEI in TRN 0084 Temporary Support so as to address this mode of monitoring between the trench and the gas lines. Per our 5/13/11 discussions, it appears that the Surface Settlement Markers, indicated as "A" on the plan, are intended to serve as traverse points for survey control along the baseline. The monitoring points, "B", should be on 100-foot intervals, instead of 200-foot as shown (ref. 3.02 D. of specification 02140), but the traverse points only need to be spaced on intervals such that the sight distance is no greater than 200 feet, i.e., 200-foot spacings, instead of 100-foot as shown (ref. 1.03 E. 1. of specification 02140). Please modify plan and clarify intent related to the "A" points.

ALLAN A. MYERS
GOV. PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC 02140
REVIEWED BY

ALLAN A. MYERS
American Infrastructure

REQUEST FOR CHANGE TO CONTRACT SPECIFICATIONS

PROJECT: Governor Printz Interceptor – Section 1

DATE: July 21, 2011

SPEC SECTION: 2140 Geotechnical Monitoring & Instrumentation

PARAGRAPH: 2140, Para 3.01.B

REQUEST:

AAM's Engineer that is directing the Instrumentation plan has indicated that a stabilized groundwater elevation should occur in less than 30 days. The request is to change "no later than 60 days prior" to "no later than 30 days prior or at the point that the groundwater has stabilized as indicated by the monitoring report for the piezometers at station 202, 203 an 204 only.

Requested by:

Jessica Ceglowski
Project Manager

Approved by:

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 02140
REVIEWED BY.

RE: RFC for 30 day monitoring period

[redacted] Jessica.Ceglowski
ekuipers, Rich.Dungan, Rick.Tisa, jaym

07/25/2011 08:34 AM

"McDonald, Robby" <McDonaldR@pbworld.com>
<Jessica.Ceglowski@aamyers.com>

<jaym@earthengineering.com>

Jessica,

In your revised letter you submitted for waiver for the piezometers located at stations 202+00, 203+00 and 204+00, you included a letter from your Geotechnical Engineer stating that three piezometers mention above has achieved steady state. Approval of this waiver will allow the work from stations 202 to 204 to proceed without a 30 day additional waiting period.

Thanks,
Robby McDonald
PB America Inc.
Field Engineer/PM
8103 Governor Printz Blvd.
Claymont, DE 19703
302-791-7773 Phone
302-791-7793 Fax
803-629-4956 Cell

-----Original Message-----
From: Jessica.Ceglowski@aamyers.com
[mailto:Jessica.Ceglowski@aamyers.com]
Sent: Thursday, July 21, 2011 3:50 PM
To: McDonald, Robby
Cc: ekuipers@nccde.org; Rich.Dungan@aamyers.com; Rick.Tisa@aamyers.com; jaym@earthengineering.com
Subject: RFC for 30 day monitoring period

Robby

Please see the attached RFC. I would appreciate a review at your earliest convenience. Thank you.

(See attached file: RFC for 30 day monitoring.pdf)

Jessie Ceglowski
Project Manager
610-960-0358 Cell
610-222-3325 Fax

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC: 02140
REVIEWED BY

ALLAN A. MYERS
American Infrastructure

REQUEST FOR CHANGE TO CONTRACT SPECIFICATIONS

PROJECT: Governor Printz Interceptor – Section 1

DATE: July 21, 2011

SPEC SECTION: 2140 Geotechnical Monitoring & Instrumentation/ 2316 Rock Excavation

PARAGRAPH: 2140, Para 3.11.D.6 & D.7 / 2316, Para 3.04.C

REQUEST:

AAM anticipates that the vibration levels at the utility lines closest to GP1 and GP2 will be above a 2.0 ppv.

The specifications referenced above both indicate a Level 2 Alert of 2.0 ppv for vibration for seismograph readings. The federal guidelines (attached) for buried utility lines is a 5.0 ppv. The request is to change the Level 1 Alert to be a 5.0 ppv vibration reading. If this change is made, a Level 2 Alert would not be applicable. The 5.0 parameter would only be in affect for buried utility lines. The reading will be taken at existing grade elevation above the utility lines.

AAM would maintain the current specification of 2.0 ppv for all above ground structures.

ALLAN A. MYERS
GOV. PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 02140
REVIEWED BY

JAMES A. MCKELVEY, III, P.E., D.GE
DIRECTOR, GEOTECHNICAL DESIGN DIVISION

AREAS OF EXPERTISE

Geotechnical engineering, hydraulic retention and dewatering,, geosynthetic engineering, environmental remediation, and heavy construction- Extensive experience in geotechnical engineering including site assessment and field investigations, deep and shallow foundation design for buildings, bridges and other structures, retaining wall design, embankment stability, mechanically stabilized soil structures, hydraulic performance of basins and dams, dewatering, and subsurface hydrology. Environmental engineering experience includes technical contributions to the remediation of many Superfund sites and over fifty landfill design projects. Site development skills include technical oversight and peer review of site grading plans and design of surface water conveyance structures, retention basins and ancillary hydraulic features. Significant experience in construction support and construction quality assurance projects. Have published over 25 technical papers in journals, conference proceedings and trade magazines.

PROFESSIONAL HISTORY

Earth Engineering Incorporated, East Norriton, PA 2005-Present
Director, Geotechnical Design Division

- Oversee design division which specializes in retaining wall design and temporary shoring. Responsible for all retaining wall designs conducted for projects in Pennsylvania, Maryland, New Jersey, and Delaware.
- Responsible for senior peer review of geotechnical engineering tasks including slope stability and retaining wall analyses, foundation design, and report preparation.
- Develop protocols for forensic investigations and design criteria for remediation of geotechnical engineering failures.
- Perform dam inspections, develop recommendations for dam and basin improvements.
- Develop dewatering systems through field and laboratory testing for construction projects and permanent structures.
- Provide engineering support for arbitration, mediation and litigation cases.
- Responsible for developing engineering skills of co-operative education students and mentoring staff engineers.

Hunt Engineering Company, Malvern, PA 2002-2005
Senior Geotechnical Engineer

- Provided technical direction for geotechnical design of shallow and deep foundations bridges, retaining walls, buildings and other structures
- Prepared site reconnaissance soils and geological engineering reports, develop subsurface geotechnical investigations, and assign laboratory analyses of recovered soil and rock samples.
- Oversaw conventional geotechnical engineering tasks including slope stability and retaining wall analyses, foundation design, seepage analyses, and report preparation.
- Performed dam inspections.

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
CONTRACT 2010-01
REFERENCED SPEC. 02146
REVIEWED BY

- Was responsible for developing engineering skills of co-operative education students and mentoring staff engineers.

Guardian Group, Inc., Torrance, CA 2000-2001
Senior Claims Management Consultant

- Was responsible for critique and evaluation of construction claims.
- Performed detailed schedule analyses, identified impacts to construction progress, and determined delay, loss of productivity and extended overhead costs for heavy construction projects.
- Prepared claims mitigation reports, equitable adjustment reports and reports presenting findings on impacted construction project evaluations.
- Provided engineering support for arbitration, mediation and litigation cases.
- Developed 'best engineering approaches' for litigation and construction claims.
- Prepared and assisted defense of construction claims.
- Provided peer review of litigation approaches for consistency and argument soundness regarding engineering and construction issues.

GeoSyntec Consultants, Huntington Beach, CA 1996-2000
Senior Project Engineer

- Managed design and construction quality assurance for landfill and Superfund design projects.
- Provided technical direction for lining system and cover designs.
- Was responsible for peer review of soil vapor extraction and well pumping design and performance criteria for contaminant remediation projects.
- Interacted with regulatory agencies on behalf of clients.
- Mentored junior and mid-level engineering staff.

Roy F. Weston, Inc., West Chester, PA 1990-1996
Project Engineer

- Was responsible for geosynthetic design analyses.
- Performed subsurface field investigations and prepared laboratory assignments.
- Completed slope stability and retaining wall analyses, shallow foundation design and deep foundation design computations.
- Performed hydraulic analyses of basins and dams, slope stability monitoring with inclinometers, and temporary dewatering systems.

Hull Construction Corp., Syracuse, NY 1990-1990
Cost Engineer

Buckley & Co. Contractors, Philadelphia, PA 1989-1990
Estimator

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EDUCATION

Drexel University *M.S., Civil Engineering*	Philadelphia, PA	1992
Drexel University *B.S., Civil Engineering*	Philadelphia, PA	1989

REGISTRATIONS AND AFFILIATIONS

Registered Professional Engineer, California, No. C057455
Registered Professional Engineer, Connecticut, No. 26668
Registered Professional Engineer, Delaware, No. 15609
Registered Professional Engineer, Maryland, No. 33533
Registered Professional Engineer, New Jersey, No. G04744000
Registered Professional Engineer, Pennsylvania, No. PE044971E
Registered Professional Engineer, Virginia, No. 0402-045257
North American Geosynthetics Society (NAGS), Vice President
Delaware Valley Geo-Institute (DVGI), Treasurer
Academy of Geo-Professionals (AGP), Diplomate
International Geosynthetics Society (IGS), Member
American Society of Civil Engineers, Member
American Society for Testing and Materials (ASTM), Voting Member
Technical Committees: D18- Soil and Rock and D35- Geosynthetics
University of Delaware, Adjunct Professor in Geotechnical Engineering

KEY PROJECTS

Pine Run Dam, Pottsville, Pennsylvania

Improvements to the Pine Run Dam included construction of a new spillway and a toe and chimney drain system along the downstream base of the dam. To construct the toe and chimney drain system the rip rap armament of this 72ft high dam to be removed from the downstream embankment and an excavation slope be cut for the proposed toe drain. Mr. McKelvey was the engineer of record for the excavation and dewatering plan as well as the instrumentation plan to monitor stability of the down stream embankment during construction of the toe drain. Monitoring and data reduction of inclinometers and vibrating wire piezometers were performed throughout successful construction under Mr. McKelvey's direction.

Uptown Worthington, Malvern, Pennsylvania

As part of this 105-acre development, twenty-five buildings, twelve retaining walls and roadway infrastructure were to be constructed over karst overburden. The consistency of the overburden was quite poor, leading to numerous geotechnical challenges. Foundation solutions developed to support the proposed buildings included mini piles, compaction grouting, temporary surcharges, and soil exchange. Mr. McKelvey directed several geotechnical investigations at the site and oversaw an extensive laboratory testing program. The development of staged construction based on undrained strength gain analyses were performed for several of the retaining walls on site. Temporary surcharge durations were

surcharge durations were accelerated by design of a wick drain field in one area of the site. A dewatering investigation was developed by Mr. McKelvey to ascertain the in-situ permeability of the soils within a proposed 25ft excavation, followed by slug testing/negative displacement testing in two pumping wells installed in the area. Design of temporary shoring and dewatering requirements were subsequently performed under Mr. McKelvey's direction.

Upland Dike, Commercial Township, New Jersey

As part of this wetland remediation project, a 4,400ft long upland dike was required to retain wetland waters from the adjacent properties. The dike was located over soft peat deposits which had very little shear strength. Mr. McKelvey directed the subsurface investigation of the subgrade soils followed by laboratory testing assignments of the recovered samples. Using the laboratory results, the amount of consolidation of the subgrade soils was determined, which subsequently dictated the amount of additional height of embankment that would be required to maintain the required dike height after consolidation. Through detailed slope stability analyses, Mr. McKelvey determined the strength of geotextile reinforcement necessary to support construction equipment that would construct the dike. The stability analyses completed by Mr. McKelvey also determined the strength of high strength geotextile reinforcement needed to provide adequate long term slope stability of the dike. Mr. McKelvey then considered that permeability of the proposed embankment soils to perform seepage analyses to assess the ability of the embankment to hydraulically retain the wetland waters. Results of the seepage analyses showed that a low permeability core would be needed to provide satisfactory hydraulic performance of the upland dike. Mr. McKelvey then designed the upland dike core using a geosynthetic clay liner (GCL). Subsequent seepage analyses showed satisfactory hydraulic performance with the GCL core.

Cherry Island Landfill, Wilmington, Delaware

This 50 acre expansion of a landfill would be located above approximately 65ft of dredge spoils, impounded by an existing berm along the Delaware River. Mr. McKelvey performed slope stability analyses in support of undrained strength gain analyses to ascertain staging needed during landfill filling operations. To reduce the time required to dissipate excess pore water pressures, Mr. McKelvey determined wick drain spacing, depth and required material properties. To confirm stability of the existing impoundment berm, inclinometers and pore pressure transducers were installed at discrete intervals along the berm. Mr. McKelvey collected the data from inclinometers and pore pressure transducers at regular time intervals over a period of one year and analyzed the collected data, confirming stability of the berm.

Lynam Run Dam, Potter County, Pennsylvania

During construction of this new 50ft high, 1,100ft long dam, Mr. McKelvey provided engineering support to the contractor. During preparation of the rock surface that would support the dam, the contractor encountered slaking rock. As the amount of dental work required to address the slaking rock would be far greater than the contract amount, Mr. McKelvey developed a laboratory testing program to demonstrate the poor quality of the bedrock. Mr. McKelvey reviewed

the hydraulic conductivity of the bedrock develop during slug testing and concluded that the slaking rock would increase the seepage through the dam. As a result, the slaking rock was required to be removed prior to dam construction.

Pickering Valley Dam, Malvern, Pennsylvania

Mr. McKelvey performed a structural integrity dam inspection of this earthen dam which impounds a 12 acre lake. The embankment was inspected for slides, scarps, evidence of instability, and the presence of seepage. While the embankment was found to have adequate structural stability, the presence of animal burrows and trees within the embankment dictated the need for maintenance.

Dover Air Force Base, Dover, Delaware

As part of the design of an aircraft refueling system, Mr. McKelvey designed a dewatering system to allow construction of the below grade components of the system. Mr. McKelvey developed pump criteria, header and collection pipe diameters and locations, and anticipated yields of the dewatering system. Geotechnical-related construction drawings and specifications were prepared by Mr. McKelvey.

Pease Air Force Base, Portsmouth, New Hampshire

Mr. McKelvey was the lead geotechnical design engineer for this project that involved removal of contaminants through groundwater pumping within a highly saturated overburden. In order to minimize structural distress of buildings within immediate area of pumping, maximum pumping rate criteria were established. For the landfill located on the base, Mr. McKelvey designed the geosynthetic components of the landfill final cover system.

Del Amo Waste Pits Superfund Site, Torrance, California

Mr. McKelvey oversaw preparation of the work plan, field investigation plan, preliminary design, construction quality assurance plan and construction documents for the remedial design of this Superfund site. The remedial design required by the U.S. EPA Order included a RCRA-equivalent cover system to be placed above the twelve waste pits at the site and installation of a soil vapor extraction system to minimize impacts on the groundwater by contaminants in the vadose zone. The waste within the pits had limited strength that complicated the cover system design as surface water management requirements required considerable soil placement above the pits to provide acceptable grades for run-off. An evapo-transpirative cover system for portions of the site proposed by the design team was accepted by the Agencies involved with the Project.

Iron Mountain Superfund Site, Redding, California

Mr. McKelvey was the lead geotechnical design engineer responsible for the geotechnical and geosynthetic aspects of this very challenging project. The Iron Mountain Superfund site, located in Redding, California, is a former copper mine, which contributed to acid mine drainage contamination of the Sacramento River. The selected remedy for this site was to collect the acid mine drainage from

from within the underground mine workings and from seepage in a former strip mine and convey this liquid to a lime neutralization plant. A very innovative geosynthetic design was developed by Mr. McKelvey for sludge containment within a former strip mine, which included a subsurface acid mine drainage seep collection system. Mr. McKelvey was also responsible for the design of the lining and filtration systems for sludge drying beds, as well as reinforced earth and conventional concrete wall designs.

Conshohocken Rail, Conshohocken, Pennsylvania

A new railroad line was required on this project to support of a waste transfer station. To provide the geometry necessary for the railroad As lead geotechnical engineer, Mr. McKelvey developed a subsurface investigation and laboratory testing program to develop geotechnical design parameters of the karst overburden. As vertical deformation was found to be intolerable for shallow foundations to support the retaining wall, deep foundation analyses were performed, with H-piles being found to be the most cost effective foundation solution. The design of the reinforced concrete cantilever retaining walls was then conducted under Mr. McKelvey's direction, followed by the development of construction drawings and specifications for the work.

Camden Housing Authority Headquarters, Camden, New Jersey

The proposed headquarters for the Camden Housing Authority consists of an eight-story office building with a three story parking structure. Mr. McKelvey oversaw the development of caisson foundations to support the column loads. Shallow foundation design for supporting structures, slab-on grade recommendations, report preparation and specifications for earthworks and drilled shafts were also performed.

Lebanon/Lancaster Interchange Modification and Expansion, Lancaster County, Pennsylvania

Modifications and expansion of Pennsylvania Turnpike Commission's Lebanon/Lancaster Interchange includes replacement of an existing bridge that carries on/off ramp traffic over the Turnpike mainline, and improvements to the toll plaza. The improvements to the toll plaza includes six new tollbooths servicing seven lanes, a utility building, and a tunnel connecting the tollbooths to the utility building. On this project Mr. McKelvey overall saw deep foundation design for the bridge, and the design of shallow foundations for a mechanically stabilized earth wall, the utility building and the toll plaza. Recommendations concerning slope stability, lateral earth pressures, structural settlement, bearing capacity and foundation types were included in a geotechnical report prepared under Mr. McKelvey's direction.

Conshohocken Road Bridges and Retaining Walls, Conshohocken, Pennsylvania

This project involved the geotechnical design for replacement bridges and associated wing walls and three retaining walls. By providing additional vertical

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clearance beneath the replacement bridges, the vertical alignment of Conshohocken Road was going to be raised as much as six feet. To preclude placement of additional stresses on two buildings immediately adjacent to the right or way, lightweight fill was proposed to partially replace the existing embankment soils beneath one of the retaining walls. Recommendations concerning slope stability, lateral earth pressures, structural settlement, bearing capacity and foundation type were included in geotechnical reports prepared under Mr. McKelvey's direction. Deep foundations were required to support one of the bridges.

Norristown Transportation Center Parking Tower, Norristown, Pennsylvania

For this new five story parking structure, Mr. McKelvey oversaw the subsurface investigation and subsequent geotechnical engineering design tasks. Deep foundation solutions to support the column loads included both caissons and H-piles to allow the owner flexibility in the bidding process. Shallow foundation design for supporting structures, slab-on grade recommendations, report preparation and specifications for earthworks, caissons and H-piles were also performed.

S.R. 6202, Section 721, Limited Access Highway, Bucks County, Pennsylvania

This project entails the relocation of U.S. 202 onto a new limited access highway in Bucks County, Pennsylvania. The proposed Section 721 of S.R. 6202 is 5.06km in length extending from just north of Pickertown Road in Warrington Township, Bucks County to the S.R. 611 Bypass in Doylestown Township, Bucks County. Mr. McKelvey oversaw geotechnical engineering tasks including slope stability and retaining wall analyses, foundation design, and report preparation for the geotechnical design of five new bridges. Also part of the scope for this project is the subsurface investigation and geotechnical design of 21 retaining walls and five culverts.

Woodcrest Train Station, Cherry Hill, New Jersey

Geotechnical engineering tasks directed by Mr. McKelvey for the proposed commuter tunnel and station head house for this project included shallow foundation design, slope stability and lateral earth pressure analyses, and report preparation for the geotechnical aspect of the project. Specifications for earthworks were also prepared under Mr. McKelvey's direction.

Philadelphia International Airport Runway Extension, Philadelphia, Pennsylvania

As part of the preliminary engineering required for preparation of the Master Plan for airport development, Mr. McKelvey oversaw a geotechnical investigation for the extension of Runway 17-35. The subsurface soils beneath the airport contain a thick stratum of soft fine-grained soils subject to consolidation. Consolidation analyses were performed using data collected from a subsurface investigation conducted at the site. Results of these analyses suggested that unacceptable surface settlements could be expected under the anticipated loads. To dissipate

loads. To dissipate excess pore pressures within the fine-grained stratum during construction, several configurations of surcharge piles and wick drains were developed for consideration. A cursory feasibility study was performed to identify other alternatives such as deep dynamic compaction, lightweight fill and deep soil mixing to mitigate the settlement of the proposed runway extension areas.

Big Cat Falls, Philadelphia Zoo, Philadelphia, Pennsylvania

For this new exhibit at the Philadelphia Zoo, Mr. McKelvey oversaw geotechnical engineering design tasks for caisson design to support containment fences for large carnivores and to support the tent-like canopy proposed over the new exhibit area. Shallow foundation design for supporting structures, slab-on grade recommendations, report preparation and specifications for earthworks and caissons were also performed under Mr. McKelvey's direction.

Harrisburg East Interchange Modification and Expansion, Harrisburg, Pennsylvania

On this project at the Pennsylvania Turnpike Commission's Harrisburg East Interchange, Mr. McKelvey directed the design of shallow foundations for two retaining walls, a new utility building, an access tunnel and a new toll plaza. Recommendations concerning slope stability, lateral earth pressures, structural settlement, bearing capacity and foundation type were included in a geotechnical report prepared under Mr. McKelvey's direction.

Greble Road Bridge over Elizabeth Run, Bethel Township, Pennsylvania

Mr. McKelvey was the lead geotechnical engineer involved in the replacement of the Grebel Road Bridge over Elizabeth Run in Bethel Township. As part of the foundation report prepared under Mr. McKelvey's direction, design analyses completed included scour criteria, shallow foundation design, settlement analyses and later earth pressure analyses.

London-Tract Road Bridge over White Clay Creek, London Britain Township, Pennsylvania

On this bridge replacement project, Mr. McKelvey was the lead geotechnical engineer involved in the replacement of the London-Tract Road Bridge over White Clay Creek in London Britain Township. As part of the foundation report prepared under Mr. McKelvey's direction, design analyses completed included scour criteria, empirical bearing capacity, weighted rock quality designation and shallow foundation design.

Litigation Support, various projects

Mr. McKelvey provided technical expertise to counsel in support of litigation for numerous cases pertaining to construction, geotechnical or environmental issues. Developing technical arguments for counsel's consideration, Mr. McKelvey provided technical support to counsel during legal proceedings. For a

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large class-action suit, Mr. McKelvey provided engineering support to the court by performing inspection of many homes in the Northridge, California area. Mr. McKelvey then prepared engineering reports which documented any geotechnical damage to the property observed during the inspection, determined if the damage could have resulted from the Northridge earthquake and provided recommendations for repair.

Frank R. Bowerman Landfill, Irvine, California

For the 40-acre Phase V-B/C expansion at this facility, Mr. McKelvey served as the Construction Quality Assurance (CQA) engineer overseeing six engineers who monitored construction of this Subtitle D lining system. Over 1.1 million square feet of the geosynthetic lining system was placed on slopes as steep as 1.5H:1V (horizontal:vertical). Geosynthetic materials deployed during construction included geosynthetic clay liners, polyethylene geomembranes, geotextiles and geocomposites. Mr. McKelvey's extensive geosynthetic expertise allowed quick resolution of lining system issues which arose during construction and instilled confidence in the interested regulators, who subsequently approved four requests during construction from the landfill owner for partial occupancy of the newly constructed lining system prior to submittal of the final CQA report.

McColl Superfund Site, Fullerton, California

Participated in the final design of a containment system for the high octane aviation fuel waste at this site. Mr. McKelvey also prepared a streamlined construction quality assurance plan that minimized redundancy typically associated with CQA plans and project specifications. Served as the construction quality assurance engineer overseeing four engineers who monitored the closure of this hazardous waste facility. The containment system included a geosynthetic cover system reinforced with geogrid and geocell, soil bentonite cutoff walls, and geogrid reinforced retaining structures. A major concern in the design was the compatibility of the containment system materials with the highly acidic (pH less than 1.0) waste. An extensive materials compatibility testing program was conducted under Mr. McKelvey's supervision to evaluate the resistance of the geosynthetic and earthen components of the containment system to the waste materials.

Sycamore Canyon Landfill, San Diego, California

Mr. McKelvey was the technical director for the design of the Stage 1B North Cell expansion of the Sycamore Landfill. The expansion area contains cut slopes inclined at 1.5H:1V with a maximum height of 125ft. Design reports generated for this project under Mr. McKelvey's direction included a static and seismic stability report for the cut slopes, waste mass and geosynthetic lined slopes and an alternative lining system proposal report. Both of these documents were submitted to the governing regulatory agency, who subsequently approved without comments. In addition to these two reports, the final design package contained design computations for geosynthetics, surface water management and volumetric analyses, a detailed cost estimate, construction drawings and specifications and a construction quality assurance plan.

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Operating Industries, Inc. (OII) Superfund Site, Monterey Park, California

Responsible for preparation of the final Report of Findings for seismicity, settlement, and slope stability issues for the OII Landfill in Monterey Park, California. Work included evaluation of permanent seismic deformations and identification of areas requiring remediation on the steep (as steep as 1.3H:1V) north face of the landfill so as to achieve adequate long-term stability of these slopes. Evaluations of the pseudostatic stability of an existing geogrid-reinforced toe buttress were also performed. Mr. McKelvey was also responsible developing slope stabilization construction alternatives on the areas identified as needing remediation. These alternatives included reinforced earth structures, debris walls and slope grading options. In addition to the design analyses required during the development of these options, Mr. McKelvey was also involved with preparing construction cost estimates for the stabilization alternatives.

Lokern Facility, Buttonwillow, California

Mr. McKelvey was responsible for the development and preparation of the Final Closure Plan for closure of five surface impoundments containing non-hazardous sludge at the Lokern facility. To comply with relevant regulations, the Owner elected to clean close one of the impoundments and close in-place the other four impoundments. The highly saturated sludge within the four impoundments was to be stabilized prior to construction of the final cover systems of each impoundment. Prior to Mr. McKelvey's involvement with the project, the Owner planned to stabilize the sludge using imported clean soil. Mr. McKelvey recognized that the sludge could be stabilized with non-hazardous waste, allowing an opportunity for the Owner to generate revenue during closure and reduce capital costs associated with the project. The Final Closure Plan for the impoundments prepared under Mr. McKelvey's direction was subsequently approved by the governing regulatory agency without comment. The final closure design and a detailed capital improvement economic analysis were then prepared under Mr. McKelvey's direction. The innovative solution to closure of the surface impoundments not only reduced the overall capital costs of the project, which was anticipated by the Owner to be in excess of $2 million, but turned it into an opportunity to generate a revenue for closure of the impoundments.

Sunshine Canyon Landfill, Sylmar, California

Mr. McKelvey was responsible for geosynthetic lining system design for this landfill which included developing an innovative geosynthetic anchorage system for the geosynthetic components of the landfill lining system for this facility. Key considerations in the design of this anchorage system was the ability to offset tension loads induced by operations layer placement and wind uplift of exposed geosynthetics. In order to comply with the clients' schedule requirements of the construction of this facility, Mr. McKelvey developed new analysis techniques to model batten strip anchorage capabilities. Construction of this system was efficient, and adhered to the scheduling constraints of the project.

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Chiquita Canyon Landfill, Valencia, California

For Phase 2B of the Canyon C landfill expansion at the Chiquita Canyon Landfill, Mr. McKelvey directed the completion of lining system design analyses. These analyses included veneer stability of the lining system on the side slopes of the facility which varied between 2H1V to 2.5H:1V (horizontal to vertical), wind uplift for exposed portions of the lining system on the side slopes, anchorage evaluations, and geotextile filtration analyses. In addition, to minimize the use of cushion geotextiles above the primary geomembrane component of the lining system and to provide the owner with optimal flexibility in screening operations for soils to overly the geomembrane, Mr. McKelvey directed a comprehensive puncture analysis. A large-scale static load test of the proposed lining system was performed under Mr. McKelvey's direction. In the test program, a vertical stress of over 22,000psf was applied to the test specimens, which represented the long-term loading that would be applied to the lining system. Using the results of this test program in a limit equilibrium analysis, Mr. McKelvey was able to demonstrate to the satisfaction of the concerned regulatory agency, that a cushion geotextile would not be required for aggregate sizes up to 1in.

Ramona Landfill, Ramona, California

For the Phase III expansion of the Ramona Landfill, Mr. McKelvey was the project manager, responsible for preparation of the waste mass and cut slope stability report. Cut slopes within the expansion area where inclined at 1.5H:1V, with a maximum height of 45ft. Under Mr. McKelvey's direction, analyses were performed to demonstrate static and seismic stability of these cut slopes would be achieved. Mr. McKelvey also directed the preparation of two alternative lining system reports: a demonstration to replace two feet of compacted clay liner with a geosynthetic clay liner; and a demonstration to replace of one foot of gravel with geosynthetic drainage composite for the leachate collection layer within the landfill. Both of these reports were approved by the interested regulatory agency without comment.

Fresh Kills Landfill, Staten Island, New York

Responsible for the geotechnical aspects of the Permit Application for the Fresh Kills Landfill Facility, a 4,200-acre landfill located on marshlands in Staten Island. The facility has been in operation since the early 1940's. In 1990, the New York City Department of Sanitation entered an Order of Consent with federal and state agencies to close two sections of the landfill facility and to apply for a Permit to continue landfill operations at the unlined facility. A major concern during development of these documents was that the global static slope stability of the landfill mass, as it had been developed over vast deposits of organic silts and clays. As the landfill slopes are anticipated to be marginally stable under anticipated static loads, significant deformations during the extreme seismic event were expected. As the owner intended to progressively close the remaining 880 acres in order to minimize leachate development, a fully developed closure system was designed. Duties performed by Mr. McKelvey involved ensuring that design computations developed by three separate engineering firms were in compliance with the state regulations and that the computations were in agreement with one another. Mr. McKelvey provided

quality assurance on geotechnical computations and prepared geotechnical sections of a conceptual closure plan, an engineering report, a site investigation report and an environmental impact report.

Aberdeen Proving Grounds, Aberdeen, Maryland

For support of the O-Field water intake system, Mr. McKelvey designed a timber pile foundation system. In support of construction of a final cover system for a burial area for nerve gas and depleted chemical munitions, Mr. McKelvey developed a working platform design to attenuate construction loads to known surface stresses above potential unexploded ordinances.

Savanna Army Depot, Savanna, Illinois

As part of the remedial action at this Superfund site, Mr. McKelvey designed the foundation for the mobile incinerator that was used to remediate contaminated soil. By first estimating the vertical deformation of the overburden soils in response to surface loading of the incinerator, Mr. McKelvey, determined that unacceptable settlement would result. Accordingly, a timber pile foundation was designed to axial and lateral loads of the incinerator.

Cragston Landfill, West Point, New York

Responsible for the design of the final cover system for the Cragston Landfill, a 50-acre municipal solid waste landfill located on the U.S. Military Academy Reservation at West Point, New York. Prior to closure activities, the partially unlined landfill served as the Military Academy's primary disposal area. A challenging feature to the design of the final cover system at this facility was existing side slopes of the landfill were as steep as 2.5H:1V. Although it was shown that a geosynthetic cover system could be placed on these slopes, political pressure on the project required that the slope inclination be reduced to 3H:1V. The final cover system design was in full compliance with Subtitle D requirements.

Edgemere Landfill, Queens, New York

During the design of the final closure of the Edgemere Landfill, a 110-acre facility located in the Borough of Queens in New York City, Mr. McKelvey was the lead geotechnical engineer. The unlined facility is situated on an island in Jamaica Bay and as such, is subject to daily tidal fluctuations. Closure design activities included a final cover system design and barge unloading facility for importing approximately 800,000cy of structural fill and other construction materials needed for construction of the cover system. Complicating the cover system design was the need for 2H:1V slopes at the toe of the landfill so as to accommodate drainage features for the facility. In addition, end use proposed by the owner included a compost facility and a public park, each sensitive to differential settlement.

Concord Landfill, Concord, New Hampshire

Analyses completed by Mr. McKelvey during the design of the final closure system for this project included reinforced earth slope and wall design, tension and veneer stability, slope stability, geotextile design, drainage layer

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performance, and depth of frost penetration. In addition, subgrade preparation beneath reinforced earth walls required additional reinforcement which was evaluated using soil arching-tensioned membrane analyses. Mr. McKelvey was also responsible for developing geotechnical-related construction drawings and specifications.

Essex Landfill, Essex Junction, Vermont

Design analyses completed by Mr. McKelvey for this for the final closure of this facility included differential settlement, tension, veneer stability, slope stability, geotextile design, drainage layer performance, and depth of frost penetration. Mr. McKelvey also was responsible for development of contract specifications and geotechnical-related details for the construction drawings.

Narvon Hazardous Waste Landfill, Narvon, Pennsylvania

Mr. McKelvey was responsible for design analyses for this hazardous waste facility which included anchorage and veneer stability, slope stability, dynamic tension analyses for ramps, leachate collection system design, geotextile design, and landfill closure design calculations.

Lanchester Landfill, Honey Brook, Pennsylvania

For the design of a two-cell expansion to an existing landfill, Mr. McKelvey was responsible for geotechnical calculations including slope stability, geosynthetic tensioning, anchorage, puncture, filtration and separation. Mr. McKelvey developed the construction quality assurance plan, and assisted with the preparation of the contract specifications and drawings for this project. In addition, Mr. McKelvey was responsible for developing leachate flow estimates needed to upgrade the onsite leachate treatment system at the site. Mr. McKelvey was involved with a waste subsidence study at this facility where the characteristics of waste compressibility were evaluated under loads induced by proposed landfill development over the waste (i.e., piggy-back landfill loads). Mr. McKelvey statistical analysis necessary for the determination of consolidation indices for the waste.

Rocky Mountain Arsenal, Denver, Colorado

At this Superfund site, was responsible for a feasibility study of various deep foundation systems for an incinerator was implemented after a settlement analysis revealed unacceptable results. Mr. McKelvey then designed and prepared construction specifications and drawings for cast-in-place auger cast piling system for this structure.

Prince George's County Landfill Expansion, Upper Marlboro, Maryland

At the Prince George's County Landfill Facility in Upper Marlboro, Maryland, Mr. McKelvey was involved with the design of a 14-cell expansion to an existing landfill and provided extensive design support during construction of a 12-acre expansion. Geosynthetic design includes geosynthetic tensioning, anchorage, puncture, filtration, and separation. Foundation design for a leachate storage tank area and a leachate treatment plant was performed by Mr. McKelvey. The storage tanks were founded on steel-pipe piles because of high loads and

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excessive settlement. The leachate treatment plant rests on shallow foundation systems.

Sullivan County Landfill, Montecello, New York

Mr. McKelvey was involved with the design of a two-cell expansion to an existing landfill in Sullivan County, New York. Design analyses for the lining system included geosynthetic tensioning, anchorage, puncture, filtration, and separation. In addition, significant zones of perched groundwater existed in several of the cut slopes of the expansion area, which were drained by a subsurface collection system consisting of a geocomposite drainage layer and piping network.

Pennsylvania Turnpike Construction Projects, Plymouth Meeting and Willow Grove, Pennsylvania

Responsible for quantity and cost engineering for the general contractor building the $56 million Mid-County Interchange project. Performed value engineering designs for high mast lighting foundations and oversaw construction of a 1,200ft long reinforced earth wall. At the highway widening project in Willow Grove, was responsible for three construction crews. Construction activities included surveying, common earthworks, subbase placement and asphalt pavement construction.

HONORS

Diplomate, Geotechnical Engineering (D.GE), inducted into the Academy of Geo-Professionals (AGP), November 2009.

Young IGS Member Achievement Award 1994 (period 1990-1994). Awarded by the International Geosynthetics Society (IGS).

REFERENCES

Mr. Ken Fredianelli
GeoSyntec Consultants, Huntington Beach, CA (714) 969-0800

Mr. Robert Mackie, P.E.
Weston Solutions, Inc., West Chester, PA (610) 701-3000

Mr. James A. Coffman, P.E.
URS, Fort Washington, PA (215) 619-4123

Mr. Ram Ramanujam, P.E.
California Environmental Protection Agency, Sacramento, CA (916) 323-3637

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September 3, 2009

Alexander Ross
Eastern Geosciences
420 Commerce Lane, Suite 9
West Berlin, NJ 08091
856-719-8500

RE: Millsboro Geoprobe and Piezometer Installation Proposal # EGS090309

Mr. Ross,

Per your request, Advanced Environmental Concepts (AEC) is pleased to submit this proposal for review and acceptance.

Phase I Scope of Work

Complete:

- (9) Macro Cores to 40 Feet BGS
- Install (9) 1" Piezometers to 40 feet BGS with 10 feet of screen
- Install (9) 2" Monitoring Wells to 25ft with 10 feet of screen
- Install (9) Protective Casings for 2" Monitoring Wells

	Quantity	*Unit Cost*	*Totals*
Mobilization	2	500	1,000.00
Macro Cores to 40ft	9	500	4,500
Installation of 1" Piezometers to 40 ft with 10ft of screen	9	700	6,300
Installation of 2" Monitoring Wells to 25ft with 10ft of screen	9	800	7200
Protective Casing Installation	9	150	1,350
Permitting	1	100	100.00
			$ 20,450.00

Phase II Scope of Work

Complete:

- (24) Macro Cores to 40 Feet BGS
- (2) Macro Cores to 25 Feet BGS
- Install (24) 1" Piezometers to 40 feet BGS with 10 feet of screen
- Install (30) 2" Monitoring Wells to 25ft with 10 feet of screen
- Install (24) Protective Casings for 2" Monitoring Wells
- Install (2) Protective Casings with 1x1 concrete pads
- Install (4) Flush mount manways with 1x1 concrete pads
- Provide support vehicle for materials transport

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	Quantity	Unit Cost	Totals
Mobilization	2	500	1,000
Macro Cores to 40ft	24	500	12,000
Macro Cores to 25 ft	2	350	700
Installation of 1" Piezometers to 40 ft with 10ft of screen	24	700	16,800
Installation of 2" Monitoring Wells to 25ft with 10ft of screen	30	800	24,000
Support Vehicle	1	700	700
Protective Casing Installation	24	150	3,600
Protective Casing w/ 1x1 Concrete pad	2	200	400
Flush mount manway w/1x1 concrete pad	4	200	800
Permitting	4	100	400
			$60,400.00

The above estimated cost assumes that all sample locations are rig accessible. Additional charges for timber or brush clearing will apply if needed or if site conditions do not allow uninhibited mobilization.

Phase III Scope of Work

Complete:

- (40) Macro Cores to 40 Feet BGS

	Quantity	Unit Cost	Totals
Mobilization	2	500	1,000.00
Macro Cores to 40ft	40	700	28,000.00
Permits	4	100	400.00
			$29,400.00

The above estimated cost assumes that all sample locations are rig accessible. Additional charges for timber or brush clearing will apply if needed or if site conditions do not allow uninhabited mobilization.

Utilities and Subsurface Structures

It is the responsibility of the property owner to accurately identify the location of any underground utilities and/or structures present within the planned survey area which are not marked by public utility mark-out (Miss Utility).

Payment and Terms

Invoices will be issued at the completion of the project and due within 30 days. Interest of 1.5% per month (but not exceeding the maximum rate allowable by law) will be payable by the client on demand as to any amount not paid when due, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. The client on demand shall pay any attorney's fees or other cost in collecting any delinquent amount.

Your acceptance and authorization to proceed with this project may be accomplished by signing this proposal. We appreciate the opportunity to provide you with our Environmental Services.

Respectfully submitted,

ALLAN A. MYERS
GOV.PRINTZ INTERCEPTOR
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REVIEWED BY

Joshua P. Winters
Advanced Environmental Concepts, Inc.
EGS090309 Accepted and Authorized by:

Signature _____ Title _____ Date _____